

REPORT ON MACHINERY.

No. 13579

Port of Glasgow

THURS. 14 MAR 1895

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey 5th Sept. 1894 Last Survey 7th March 1895

(Number of Visits 44)

on the S.S. Azov

Tons } Gross 1000
Net 1000
When built 1895

Master I. P. P. P. P. Built at Glasgow By whom built W. Kennell & Co.

Engines made at Glasgow By whom made Dunsmuir Jackson when made 1895

Boilers made at Glasgow By whom made " when made 1895

Registered Horse Power 1000 Owners Sigismundo Kopaitich Port belonging to Fiume

Nom. Horse Power as per Section 28 162.

ENGINES, &c.— Description of Engines Triple expansion inverted directacting No. of Cylinders three

Diameter of Cylinders 19", 31 1/2", 51 1/2" Length of Stroke 36" Revolutions per minute _____ Diameter of Screw shaft as per rule 9 2/5"
as fitted 9 1/2"

Diameter of Tunnel shaft as fitted 9 1/2" Diameter of Crank shaft journals 9 1/2" Diameter of Crank pin 9 1/2" Size of Crank webs 6 1/2 x 18"

Diameter of screw 13' 6" Pitch of screw 16' 0" No. of blades four State whether moveable fixed Total surface 49 sq. ft.

No. of Feed pumps two Diameter of ditto 2 1/2" Stroke 18" Can one be overhauled while the other is at work yes

No. of Bilge pumps two Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work yes

No. of Donkey Engines three Sizes of Pumps Duplex Ballast double acting 7 1/2 x 8 x 8"
5 1/2 x 3 1/2 x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
2 x 2 x 2

In Engine Room two 2 3/4" in gutters as approved. In Holds, &c. Two 2 1/4" in fore hold, one 2 1/2"
in tunnel and aft hold.

No. of bilge injections one sizes 4" Connected to condenser, or to circulating pump circ Is a separate donkey suction fitted in Engine room & size 2 3/4"
to starb. gutter

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible none

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above

Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes

What pipes are carried through the bunkers bilge pipes How are they protected undercoiling

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight apparently

Is it fitted with a watertight door yes worked from upper platform.

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 2469

No. and Description of Boilers one Cylindrical return tubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 13/2/95 Can each boiler be worked separately — Area of fire grate in each boiler 69 sq. ft. No. and Description of safety valves to each boiler two spring loaded. Area of each valve 8' 29 sq. in. Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork two feet Mean diameter of boilers 192"

Length 11' 0" Material of shell plates Steel Thickness 1 1/4" Description of riveting: circum. seams Lap 2 Rivet long. seams D Butt. 5 Rivets

Diameter of rivet holes in long. seams 2 1/16" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 2 1/4"

Per centages of strength of longitudinal joint 88 Working pressure of shell by rules 160 lbs. Size of manhole in shell 12" x 16"

Size of compensating ring 1 1/4" x 7 1/4" No. and Description of Furnaces in each boiler three ribbed Material steel Outside diameter 47"

Length of plain part top 7' 7 1/2" bottom 7' 1 1/2" Thickness of plates top 3 1/32" bottom 3 1/32" Description of longitudinal joint weld No. of strengthening rings ribs

Working pressure of furnace by the rules 160 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 9/16" Top 5/8" Bottom 15/16"

Pitch of stays to ditto: Sides 9 1/8" Back 8 1/4" Top 9 1/8 x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 161 lbs

Material of stays Steel Section Diameter at smallest part 1 7/8" Area supported by each stay 83 sq. in. Working pressure by rules 169 End plates in steam space: Material Steel Thickness 1 Pitch of stays 16 3/8" How are stays secured D. Nuts. Working pressure by rules 166 lbs Material of stays Steel

Section Diameter at smallest part 5 1/4" Area supported by each stay 268 sq. in. Working pressure by rules 177 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 185 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 7/8" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 11 3/4"

Pitch across wide water spaces 14 1/2" Working pressures by rules 228, 213 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 1/2" x 2 x 1" Length as per rule 32" Distance apart 8" Number and pitch of Stays in each 2 x 9 1/8"

Working pressure by rules 172 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately

Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

If stiffened with rings _____ Distance between rings _____ Working pressure by rules _____ End plates: Thickness _____ How stayed _____

Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

GLS 171-0318

If not, state whether, and when, one will be kept? Report also sent to the Registrar of the Ship? Copyable Ink.



13519 Gls

Copy of Newcastle report dated 5.3.95

DONKEY BOILER— Description *Vertical four cross tubes*
 Made at *G. head* By whom made *Clarke Chapman & Co* When made *1895* Where fixed in *Stakehead*
 Working pressure *80lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *4505* Fire grate area *184 sq ft* Description of safety valves *Spring loaded*
 No. of safety valves *one* Area of each *8.3* Pressure to which they are adjusted *80lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *5'-6"* Length *13'-6"* Material of shell plates *Steel* Thickness *25/64"*
 Description of riveting long. seams *B. R. lap.* Diameter of rivet holes *9/16"* Whether punched or drilled *drilled* Pitch of rivets *3"*
 Lap of plating *48"* Per centage of strength of joint *75* Rivets *72* Thickness of shell crown plates *11/32"* Radius of do. *5 ft* No. of Stays to do. *five*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *4'-6 1/2"* Bottom *4'-10"* Length of furnace *5'-6"* Thickness of furnace plates *9/16"* Description of joint *B. R. lap.* Thickness of furnace crown plates *1/2"* Stayed by *as above* Working pressure of shell by rules *90 lbs*
 Working pressure of furnace by rules *80 lbs* Diameter of uptake *14"* Thickness of uptake plates *13/32"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *As required by the Rules.*

The foregoing is a correct description,
Dummir & Jackson Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boilers of this vessel have been built under the conditions of special survey and they have been securely fitted on board, and the safety valves adjusted under steam.*

The engines have not yet been tried under steam, but it is expected that the trial trip will be run in a day or two. This report is being forwarded now as the Owners are desirous of possessing the certificates before the vessel leaves this country.

It is submitted that this vessel will be eligible for the record + L.M.C. 3.95 when the engines have been tried under steam and found satisfactory in a few days time.

[Large blue signature]

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee..	£ 2 : 0 : 0	When applied for,	
Special	£ 24 : 6 : 0	12/31/95	
Donkey Boiler Fee .. .	£ .. : .. : ..	When received,	
Travelling Expenses (if any)	£ .. : .. : ..	13/31/95	

C. E. Steamer
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRIDAY 15 MAR 1895**

Assigned *+ L.M.C. 3, 95*
Cost to be retained by Surv.
Bill survey completed
In order now (per the ltr) as 25/3/95



(The Surveys are requested not to write on or below the space for Committee's Minute.)